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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,976	10/31/2003	Prabir C. Maulik	A0312.70494US00	8831
23628	7590	11/14/2007		
WOLF GREENFIELD & SACKS, P.C. 600 ATLANTIC AVENUE BOSTON, MA 02210-2206			EXAMINER LEE, SIU M	
			ART UNIT	PAPER NUMBER
			2611	
			MAIL DATE	DELIVERY MODE
			11/14/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/698,976	Applicant(s) MAULIK ET AL.	
	Examiner Siu M. Lee	Art Unit 2611	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 October 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 and 12-16 is/are allowed.
- 6) ☒ Claim(s) 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claim 2 to 16 have been considered but are moot in view of the new ground of rejection.
2. Applicant's arguments, see page 7, filed 10/22/2007, with respect to objections to the drawings have been fully considered and are persuasive. The objection of figure 5 has been withdrawn.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Chan (US 6,389,077 B1) in view of Smith et al. (US 6,937,971 B1).

Chan discloses a transmit line driver (transmit DAC 29 in figure 2) comprising:  
a digital-to-analog converter (DAC) receiving a digital input and providing at least one analog current output (a DAC (not shown as a separate block) included in the interpolation digital filter 33 in figure 3 receives input signal and converts the filtered digital output to an analog signal current, column 10, lines 21-24); and

conversion circuitry (DAC current mode line driver array 36 in figure 3) adapted for coupling between the DAC (DAC in the interpolation digital filter 33 in figure 3) and a transformer of the transmit line (the line interface circuit between the transceiver and the channel can be simply implemented by a pair of series coupled resistors and a relatively simple transformer element 213 in figure 22, column 26, lines 34-40), the conversion circuitry adapted to convert the analog current output to a signal to be transmitted over the transmit line via the transformer (column 15, lines 56 – column 16, line 3), wherein the conversion circuitry is configurable such that the transmit driver is capable of operating in at least one current mode (since the current mode is not defined, the examiner interpret the current mode as the Class A operation of the line driver circuit, column 16, lines 58-61) and at least one voltage mode (since the voltage mode is not defined, the examiner interpret the voltage mode as the Class-B operation of the line driver circuit, column 16, lines 61-64) depending on at least one characteristic of the transmit line (the electromagnetic interference emission cause d by the transmission line, column 18, lines 15-25).

Chan fails to explicitly discloses wherein the at least one characteristic of the transmit line includes at least one impedance of the transmit line.

However, Smith et al. discloses that a relationship between the impedance and electromagnetic interference (EMI) (EMI is typically reduced by reducing the impedance of the power and ground conductors, reducing the impedances of the power and ground conductor thus reduces EMI, column 3, lines 17-22).

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It is desirable to configure the transmit driver in at least one mode depending on the impedance of the transmission line because it can reduce the electromagnetic interference and reduce crosstalk (column 4, lines 62-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Smith et al. in the system of Chan to provide a more reliable system.

***Allowable Subject Matter***

5. Claims 1-10 and 12-16 are allowed.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Siu M. Lee whose telephone number is (571) 270-1083. The examiner can normally be reached on Mon-Fri, 7:30-4:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Siu M Lee  
Examiner  
Art Unit 2611  
10/30/2007

  
CHIEH M. FAN  
SUPERVISORY PATENT EXAMINER